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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,473

Applicant(s)

ZIEBELL, RICK A.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 21-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19, 20 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 13, 17, 18, 24-26 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20 and 24-30 drawn to a composition and a method of using said composition, classified in class 524, subclass 268.
- II. Claims 21 and 22, drawn to composite comprised of a thermoplastic and a molding composition, classified in class 428, subclass 447.
- III. Claim 23, drawn to a molding method, classified in class 264, subclass 241.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II or III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

Invention II is directed to a composite having a thermoplastic layer and a second layer comprised of a molding composition. To the extent that the molding composition does not necessarily contain the same ingredients that comprise the invention of group I, inventions I and II are unrelated. The same rationale may be applied in evaluating the relationship between inventions II and III.

Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the method disclosed in claim 23 could be

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used to prepare a composite featuring any of a vast number of different materials.

Moreover, an argument could be made that the inventions are unrelated because the molding composition of claim 21 and the curable composition of claim 23 do not have to be similarly constituted given the general language employed.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kathy Mojibi on October 30, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-20 and 24-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

1. The following is a quotation of the first paragraph of 35 USC §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

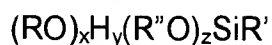
The following is a quotation of 37 CFR §1.71(a):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

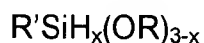
The specification is objected to under 37 CFR §1.71 because the formulaic representations of the adhesion promoter and epoxy-functional compound on pages 11

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of the Specification respectively do not provide an accurate portrayal of these compounds. For instance, the Applicant depicts the epoxy-functionalized compound as:



wherein RO denotes an alkoxy substituent and R' is "an (un)substituted alkane. The variable "H" is employed to denote a hydrogen atom, a hydroxyl group, or a halogen atom. Insofar as the letter "H" is ubiquitously recognized as indicative of a hydrogen atom in the art, it is strongly recommended that Applicant select another letter to represent this structural aspect of the compound. It is further noted that the substituent in which the epoxy group is found is hydrolyzable which would appear to be an undesirable structural feature given that the essential epoxy group may be dissociated from the silicon center upon the introduction of water. Also, one of the preferred embodiments of this compound, according to lines page 12, line 1 is glycidoxypropyltrimethoxysilane but the above formula is not an adequate representation of this compound for several reasons including (i) the epoxy-containing radical in glycidoxypropyltrimethoxysilane is not hydrolyzable, (ii) the above formula requires the presence of one alkyl substituent R' but, again, glycidoxypropyltrimethoxysilane does not feature one of said substituents. A more appropriate formulaic description would be:



wherein R' symbolizes a glycidoxyalkyl- or epoxyalkyl- group and -OR represents a linear alkoxy group. If Applicant prefers to more particularly describe the makeup of a glycidoxy group, an alternative to the above representation would be



wherein R' denotes a CH_2-CHCH_2- residue, R'' is a divalent hydrocarbon group and

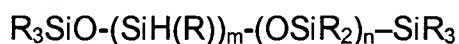


-OR represents a linear alkoxy group. The formula on page 10 is, likewise, unsatisfactory insofar as it is intended to represent a hydrox[*in*]ated (*sic*) silicone but it cannot be ascertained what the connectivity of the variables is intended to be. For instance, while it is believed that the silicone will have at least two organic groups attached to each silicon atom along the polymer backbone, there is nothing in the formula that would confirm this presumption. Moreover, vinyl/acryl-functionalization seems to be preferred but there is no indication in the disclosure that these groups are essential moieties of the hydroxylated silicone. Perhaps a better structural description of this component would be:



wherein R is a C₁-C₁₀ monovalent alkyl, or alkenyl radical of linear- or branched orientation. In outlining the definitions of the variables in the hydroxinated silicone, reference is made to R' despite the absence of this group from the formula on page 11, line 9. Mention of R' should be removed as it only lends confusion to the disclosure.

The formula corresponding to the organohydrogensiloxane on page 9 is, likewise, convoluted and would be better written as:



wherein m and n are expressly delineated.

On page 8, line 9, ethyl cyclohexan-1-ol is identified as a preferable hydrosilylation reaction inhibitor. It is the Examiner's contention that this compound, is not, in fact, capable of serving as an inhibitor as it lack ethylenic unsaturation. It is submitted that the compound should have been ethenyl- or ethynyl cyclohexan-1-ol (see claim 27).

The compound pyradien alcohol (page 10, line 22) is unfamiliar to the Examiner. Clarification is needed.

The Examiner also questions the Applicant's characterization of vinyltrimethoxysilane, chlorotrimethoxysilane, and divinyltrimethoxysilane as epoxy-functionalized silanes in that these compounds do not, in fact, contain epoxy groups. In the context in which these compounds appear, it may, perhaps, be inferred that these compounds are merely alternatives to the epoxy-functionalized compound but, due to the imprecise manner in which these compounds were disclosed, may also be construed as other members of the epoxide-functionalized silane family of compounds. Since the mention of an epoxy-functional compound also appears in the claims, it will be assumed for the purpose of examination that component (F) is actually intended to be an organo-functional compound suitably containing a chloroalkyl- group, a vinyl group, or a glycidoxyalkyl group.

Components E and F on page 17 under Table 1 have been mischaracterized. Indeed, glycidoxypropyltrimethoxysilane serves as the epoxy-functional compound and the hydroxyl-terminated, vinyl-functionalized polydiorganosiloxane functions as the adhesion promoter. Correction of all of these problems is required.

Claim Objections

Claim 13 is objected to because of the following informalities because they are punctuated improperly. Appropriate correction is required.

The second instance of the word "is" in claim 29 should be removed.

Claim 30 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 9. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 6, 11, 14, 16, 26, 27, 28, and 29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Concerning claims 3, 26, 28, and 29, each of these claims contains a formula that was objected to in the Specification as indecipherable. Correction to both the claims and the Specification is required.

As for claim 6, a "neutralized complex of chloroplatinic acid" is ambiguous. Are the Applicants claiming a *reduced* form of this compound i.e. elemental platinum?

As for claim 11, the alkoxysilane recited therein does not appear to be supported by the Specification.

As for claim 14, the designation "type 4 or 5" is not defined in the specification.

As for claim 16, PBT and PBA are obviously acronyms for two of the thermoplastic materials that may be used in preparing the composite of the instant invention but they have not been further defined. It is believed that PBT refers to polybutylene terephthalate although PBA is not familiar to the Examiner. At any rate, the Applicants are required to indicate what polymers these acronyms represent.

As for claim 27, the compound "pyradien alcohol" is not recognized. Furthermore, ethenylcyclohexanol is not supported by the Specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5, 7-8, 10-13, 15-16, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Muramatsu et al., U.S. Patent # 5,879,809. Concerning claims 1, 4-5, 12-13, and 15-16, they disclose an integrally-molded body comprising a resinous thermoplastic layer and an oil-bleeding siloxane elastomer layer. A resin selected from one of many structurally dissimilar thermoplastic materials (column 3, lines 1-23) having an ethylenically unsaturated group(s) including polybutylene terephthalate is prescribed for the first aspect of the invention. In column 6 of the reference, the essential components of the silicone elastomer are revealed. Among the compounds employed to prepare the rubber layer are:

- (1) an alkenyl/vinyl-functionalized/terminated polysiloxane,
- (2) an organohydrogensiloxane,
- (3) a platinum hydrosilylation catalyst such as an olefin-, acetylenic alcohol- or vinylsiloxane complex of chloroplatinic acid,
- (4) a coupling agent comprising an organosiloxane having a plurality of silicon-bound hydrogen atoms and at least one functional group chosen from epoxy groups, carboxyl anhydride groups, and hydrolyzable silanes,
- (5) a "non-functional" polysiloxane oil, and

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(6) silica.

Exemplary compounds meeting the structural requirements of component (4) are exhibited in columns 9 and 10. Insofar as (4) is characterized as an adhesion promoter and may, in one preferred embodiment, further contain epoxy groups, aspects (E) and (F) of the instant invention are concurrently satisfied. Muramatsu does not particularly mention the inhibitor but one of ordinary skill will appreciate that platinum catalysts having coordination sites occupied with ethylenically unsaturated ligands, i.e. acetylenic alcohols and vinylsiloxane oligomers, display lower reactivity relative to their congeners that are free of such ligands. Further, components (1), (2), (3), and (5) coincide with (A), (B), (C), and (G) respectively thus all of the ingredients of claim 1 are contemplated.

As for claim 2, a vinyl-functionalized polysiloxane with an overlapping viscosity range is disclosed in column 7, lines 2-22.

As for claim 3, an equivalent compound is described in column 8, lines 16-26.

As for claims 7 and 8, an overlapping range is prescribed in column 8, lines 50-53. Though this range is reported in relation to component (1) only, the recited range is still anticipated since this material constitutes by far the largest fraction of the polymer materials.

As for claim 10, the adhesive agent containing epoxy groups is made available in an amount corresponding to 0.1 to 50 parts of the composition.

As for claim 11, the epoxy-functionalized adhesion promoter may further contain hydrolyzable alkoxysilyl groups as is the case in the second structure shown in column 9.

Finally, non-functional oils fitting the description of the compounds mentioned in claim 19 are delineated in columns 11-13.

Claims 1-13, 28, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Enami et al., U.S. Patent # 6,265,480. Enami describes a silicone gel composition having improved thixotropic properties that may be employed in the formulation of sealants, shock absorbent agents, and encapsulants for electronic devices. Mentioned as essential ingredients are (i) an alkenyl group-functionalized polysiloxane (column 2, lines 21-53) featuring M, D, and T units having a viscosity of up to 100,000 mPa's wherein 1mPa's = 1 centipoise, (ii) an organohydrogenpolysiloxane (column 2, lines 54-67 through column 3, lines 1-7) containing a minimum of two hydrosilyl groups per molecule and having a viscosity of up to 100,000 mPa's, (iii), 0.1 to 1000 ppm of a platinum catalyst selected from, among others, chloroplatinic acid, olefin complexes of platinum, and vinylated disiloxane complexes of platinum, (iv) silica powder, and, (v) an adjuvant responsible for modifying the thixotropy of the mixture such as an epoxy compound, a polyhydric alcohol, *and mixtures thereof* (column 1, lines 63-67 through column 2, lines 1-14). These six materials correspond to components (A), (B), (C), (F) and (G) of the instant invention respectively. Further, in column 4, addition reaction-inhibitors, and adhesion agents are particularly mentioned as optional materials hence Enami contemplates all of the materials of claim 1.

As for claims 9, 28, and 30, 3-glycidoxypopyltrimethoxysilane is specifically reported in column 4, lines 4. Further, Applicant has admitted on page 12 of the

Specification that the formula exhibited in claim 28 is intended to be representative of the aforementioned compound.

As for claim 10, component (v) preferably comprises 0.01 to 5 parts of the composition relative 100 parts of (i) which, according to the Table 1, is made available in an approximately 18:1 ratio relative to (ii). Accordingly, component (v) is added as 0.01 to 5 parts by weight relative to approximately 105 parts by weight of (i) and (ii) hence the limitation of claim 10 is satisfied.

As for claim 11, 3-glycidoxypropyltrimethoxysilane fulfills the requirement that an "alkoxysilane" be present. (Applicant's use of the phrase "further comprising" does not necessitate the presence of an alkoxysilane other than the epoxy-functional material).

Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Lutz et al., U.S. Patent # 5,973,044. Lutz discloses a mixture of compounds that, together, impart adhesive character upon curable silicone compositions. In the broadest embodiment of their invention, the composition comprises (a) a polyhydric alcohol, (b), an organosiloxane containing at least one organofunctional group and at least one hydroxyl- or hydrolyzable group, and (c) a silane bearing three hydrolyzable groups. In column 4, lines 32-34 and column 4, lines 47-50, a hydroxyl-terminated dimethylsiloxane/methylvinylsiloxane copolymer and an glycidoxypropyltrialkoxysilane are identified as the most preferable embodiments of (b) and (c).

It is noted for the record that the phrase, "for increasing the selective adhesion of an elastomer to a resin but not to a metal" is merely a statement of intended use.

Section 2112.02 provides direction as to how phrases such as this are to be treated: "If

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the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) ("where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation"); *Kropa v. Robie*, 187 F.2d at 152, 88 USPQ2d at 480-81 (preamble is not a limitation where claim is directed to a product and the preamble merely recites a property inherent in an old product defined by the remainder of the claim). Therefore, claim 20 recites, in the broadest possible sense, a composition containing a polydiorganosiloxane/polycyclosiloxane and an epoxy-functional compound as well as any other materials. (The transitional phrase "comprising" is open-ended).

There are literally dozens of patents that mention these two materials in combination and, hence, anticipate claim 20. Only Lutz was applied at this time because the disclosed materials are used in concert to provide adhesion as the Applicants have stipulated. However, any patent teaching a composition having these broadly-stated materials could be employed as a basis for rejection.

Claims 1-5, 7-12, 20, 28, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Mine et al., EP 757 080 A2. Mine discloses a silicone adhesive

composition featuring a curable polymer system comprised of condensation-curable and addition-curable materials alike. In particular, the composition is comprised of the following:

(A) 100 parts by weight of a mixture of alkoxy-functionalized polysiloxane and polysiloxane bearing ethylenically-unsaturated hydrocarbon groups or, alternatively, a single organosilicon polymer containing both of the aforementioned moieties, having a viscosity of 20 to 200,000 mPa's,

(B) an organohydrogenpolysiloxane having a viscosity 2 to 20,000 mPa's in an amount that provides 0.3 to 20 hydrosilyl groups for each silivon-bound alkenyl group in (A) (page 5, lines 51-52),

(C) a condensation catalyst,

(D) 0.01 to 1000 pmm of a platinum catalyst selected from chloroplatinic acid, platinum-olefin complexes, platinum-vinylsiloxane complexes, supported platinum, etc.

(E) a linear siloxane polymer bearing alkoxy, alkenyl, and epoxy substituents,

(F) an electrically conductive filler, and, optionally,

(G) a silane crosslinking agent adhering to the formula $R^1_a Si(OR^2)_{4-a}$ wherein R^1 denotes an alkyl group, an acryl- group, or an epoxy/glycidoxy group.

According to page 10, lines 29-35, among the epoxy-functional silanes, those containing a single glycidoxypropyl group and three methoxy groups is preferred.

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Other ingredients contemplated by Mine are addition reaction inhibitors (page 11, lines 46-53), inorganic fillers including several forms of treated- or untreated silica (page 11, lines 54-57, and organic solvents or non-functional polyorganosiloxane as a diluent (page 12, lines 1-4).

As for claim 28, Applicant has admitted on page 12 of the Specification that the formula exhibited in claim 28 is intended to be representative of a compound featuring a single glycidoxypropyl group and three methoxy groups i.e. glycidoxypropyltrimethoxysilane.

Allowable Subject Matter

Claims 17-18 and 24-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Hashimoto et al., U.S. Patent # 5,989,704 is cited as being of interest as it teaches much the same invention as did Muramatsu. Van Wert et al., U.S. Patent # 5,270,425 teaches a self-adhesive polysiloxane composition containing all of components (A) through (F) of the instant invention. However, the objective of their studies was, in contrast to Applicant's efforts, to identify a composition that would bond

to metal. Hara, U.S. Patent # 6,201,092 discloses a composition featuring each of components (A) through (E) of claim 14.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 703-605-1176. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

October 31, 2002



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700